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Descriptions of Two New Species of *Eurhodope* and Synonymic Notes on Two Known Species Belonging to *Eurhodope* and *Assara* from Japan (Lepidoptera: Pyralidae, Phycitinae)

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In this paper two new species of the genus *Eurhodope*, closely allied to *E. dichromella* (RAGONOT), will be described, and also little known species *Eurhodope hollandella* (RAGONOT) and *Assara funerellum* (RAGONOT), which have been neglected since the publication of the original description, will be critically reconsidered with records of specimens and illustration of moths.

In writing this paper I am much indebted to Drs. E. G. MUNROE and A. MUTUURA, Biosystematics Research Institute, Research Branch, Agriculture Canada, for their valuable advice and their giving me an opportunity to examine RAGONOT's type-specimens of the Phycitinae belonging to the Carnegie Museum. I also wish to thank Dr. H. INOUE, Otsuma Woman's University, in offering me some specimens and loan of the type-specimen of *Homoeosoma albocostella* INOUE for comparision. I also thank Messrs. A. KAWABE, T. MAENAMI, T. MINAMIYAMA, K. MIYAMORI, S. TSUKASAKI and Y. WATANABE for their kind gift of specimens.

Eurhodope dichromella (RAGONOT)

Rhodophaea dichromella RAGONOT, 1893, in ROMANOFF, Mém. Lép., **7**: 75; 1901, ibidem, **8**, pl. 43, fig. 3; LEECH, 1901, Trans. ent. Soc. Lond., **1901**: 412; MATSUMURA, 1905, Cat. Int. Jap. (Lep.): 198, no. 1657; INOUE, 1955, Check List Lep. Jap., **2**: 140, no. 785.

Eurhodope dichromella: SHIBUYA, 1932, Ins. World, **36**: 331; MUTUURA, 1957 & 1971, in Icon. Het. Jap. Col. Nat., (1): 99, pl. 17, fig. 538; INOUE, 1957, in Icon. Ins. Jap. Col. Nat. Ed., **1**: 239, pl. 167, fig. 23.

Original description by RAGONOT, 1893:

22 mill. ♀ Ailes supérieures assez larges, arrondies sur la côte, obliques et arrondies sur le bord externe, *gris blanchâtre*, saupoudrées et lavées de *brun noirâtre*. Lignes transversales *blanches*, *continues*, la première oblique, *convexe* extérieurement, atteignant le milieu du bord interne, bordée du côté interne d'une large bande brun noirâtre qui s'atténue vers la côte, qu'elle n'atteint pas, et bordée, du côté externe, d'une graden tache triangulaire brun noirâtre la côte. Deuxième ligne sinueuse, bombée au milieu, rentrant sur les plis, bordée du côté interne par une *ombre très large* d'un *brun noirâtre*, ombre qui se dilate sur le pli dorsal et se rétrécit sur la côte; la deuxième ligne est également bordée extérieurement de brun noirâtre, plus étroitement au milieu. On ne peut que deviner une *épaisse tache discoidale* allongée, parce qu'elle se détache à peine de la couleur foncée. Points marginaux noirs, très distincts. Ailes inférieures brunâtre uni, lisérées de noir, la fragne grise. Dessous des quatre ailes brun uni; la nervulation normale, la cellule des inférieures longue, 2 très écartée, 3 de l'angle.

Tête, thorax et antennes brun noirâtre. Palpes gris noir, plus pâles à base. Abdomen gris ocraeé zoné de noirâtre. Pattes grises, gles tarses noirs.

Japon; une ♀ de la coll. PRYER, coll. HOLLAND, de Pittsburg (Pens.).

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Male genitalia. Uncus triangulate with slight hair dorsally, terminal half narrow, apex blunt, basal half of outer margin deeply folded, central projection of gnathos rather spatulated, with a shortly bifid apical process, valva narrow, apex smoothly rounded, harpe small, lobed with minute hairs, sacculus narrow, rather short, saccus broad, triangualte, juxta consisting of two broad lobes, transtilla arm developed, incised medially, deeply and narrowly U-shaped at base of central projection of gnathos, aedoeagus short, broad, with weakly sclerotized wrinkles, ventral tuft of 8th abdominal segment as in fig. 14.

Female genitalia. Ovipositor small, slightly setose lobes, apophyses anteriores rather short, slender, almost straight, apophyses posteriores short, nearly equal in length as apophyses anteriores, 8th segment broadly sclerotized at its posterior end, ostium with flexible dome-like specialization at its ventral side, ductus bursae narrow, rather short, bursa copulatrix elongate, somewhat pyriform, small, circular signum consisting of concentrically arranged many pointed thorns.

Specimens examined.

Holotype ♀, Japan, in the Canadian National Collection (property of the Carnegie Museum).

1 ♀, Fukazawa, Setagaya, Tokyo, 15 vi 1954 (H. YAMANAKA). 1 ♂, Kugenuma, Fujisawa, Kanagawa Pref., 14 vii 1958 (H. INOUE). 1 ♂, Bijodaira, Mt. Tateyama, Toyama Pref., 13 vii 1958 (H. YAMANAKA). 1 ♀, Anamizu, Fugeshigun, Ishikawa Pref., 8 viii 1961 (A. KAWABE). 1 ♂, Seridani, Tonami, Toyama Pref., 22 vii. 1966 (H. YAMANAKA). 1 ♂, Toga Village, Toyama Pref., 19 viii 1974 (H. YAMANAKA). 2 ♀, Bijodaira, Mt. Tateyama, Toyama Pref., 26 vii 1977 (S. TSUKASAKI). 1 ♀, Dainichi-dam, Ishikawa Pref., 1 vii 1978 (A. TOMISAWA). 1 ♂, 1 ♀, Ohdawa Pass, Arimine, Toyama Pref., 28 vii 1979 (H. YAMANAKA), in the collection of H. YAMANAKA.

Distribution. Japan (Hokkaido, Honshu, Shikoku,? Kyushu).

Eurhodope pseudodichromella sp. nov.

External characters of this new species are very similar to those of *E. dichromella* (RAGONOT), but antemedial line is moderately curved, not angulated.

External characters. Expanse 17–21 mm. Frons pale fuscous, smoothly scaled, labial palups actutely upturned, trifle reaching vertex, fuscous, outer surface of 3rd segment mixed with whitish scales, inner surface of 2nd and 3rd segment more or less pale fuscous, but in some specimens wholly suffused with fuscous scales, maxillary palpus same color as labial palpus, vertex and thorax above pale fuscous, roughly scaled, abdomen above fuscous, posterior edges of each segment ringed with yellowish fuscous, abdomen beneath pale fuscous, legs pale yellow in its inner surface, outer surface more or less mixed with fuscous scales, forewing greyish fuscous, antemedial line white, rather prominent, moderately curved distad from costa at about one-fifth to hind margin at one-third, edged distally with a blackish cloud, an obscure blackish lunule on discocellulars, submarginal line ashy grey, rather faint, roughly sinuated, central part of forewing between antemedial line and submarginal line more or less broadly and somewhat triangularly suffused with ashy grey, cilia pale fuscous, hindwing dark grey, basal half more or less paler than distal half, cilia concolorous with fore-

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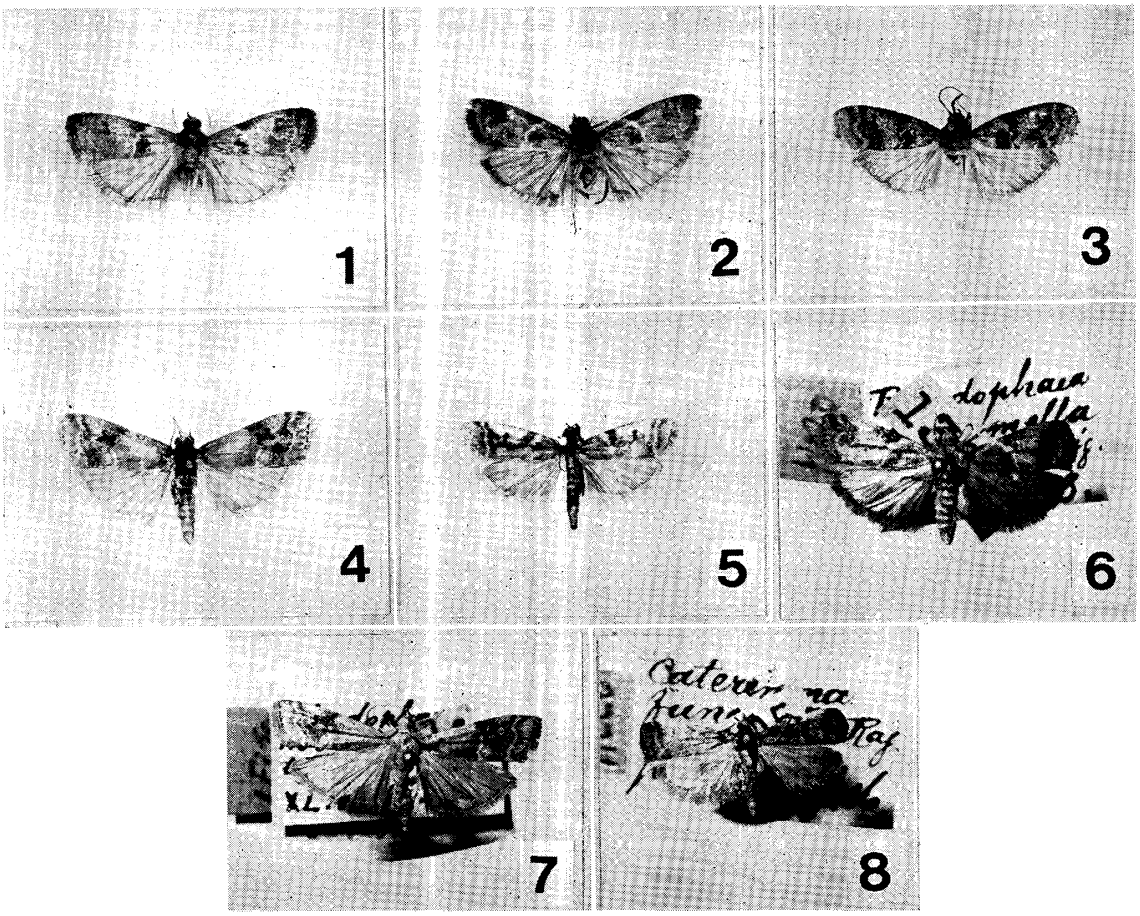

Figs. 1. *Eurhodope dichromella* (RAGONOT), ♂. Fig. 2. *Eurhodope pseudodichromella* sp. nov., (Holotype, ♂). Fig. 3. *Eurhodope paradichromella* sp. nov. (Holotype, ♂). Fig. 4. *Eurhodope hollandella* (RAGONOT), ♂. Fig. 5. *Assara funerellum* (RAGONOT), ♂. Fig. 6. *Eurhodope dichromella* (RAGONOT), (Holotype, ♀). Fig. 7. *Eurohdope hollandella* (RAGONOT), (Lectotype, ♂). Fig. 8. *Assara funerellum* (RAGONOT), (Holotype, ♂).

wing, under surface of both wings dark grey, but coloration of forewing is more or less darker than hindwing.

Male genitalia. Very similar to *E. dichromella* (RAGONOT), but is distinguished by the following point: transtilla with central incision deeper and narrower.

Female genitalia. Almost identical with those of *E. dichromella* (RAGONOT).

Type-series.

Holotype ♂: Bijodaira, Mt. Tateyama, Toyama Pref., 13 vii 1958 (H. YAMANAKA).

Allotype ♀: Toga Village, Toyama Pref., 19 viii 1974 (H. YAMANAKA).

Paratypes. 1 ♂, Asama-kôgen, Gunma Pref., 29 vi 1954 (H. YAMANAKA). 1 ♂, same data as holotype (H. YAMANAKA). 1 ♀, Toga Village, Toyama Pref., 21 viii 1969 (H. YAMANAKA). 1 ♀, Kanetsuri, Unazuki, Toyama Pref., 21 vii 1973 (H. YAMANAKA). 2 ♂, 1 ♀, same data as allotype (H. YAMANAKA). 2 ♀, Katsura, Kamitaira Village, Toyama Pref., 26–27 vii 1976 (H. YAMANAKA), in the collection of H. YAMANAKA. The following 30 ♂♀ as in coll. H. INOUE: Oshidomari, Rishiri Is.,

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Hokkaido; Akadani, Niigata Pref.; Nishino, Kaida Village, Nagano Pref.; Yunotaira Spa and Mikaboyama, Gunma Pref.; Mt. Mitsumine and Iruma City, Saitama Pref.; Mt. Takaosan, Tokyo; Kugenuma and Chigasaki, Kanagawa Pref.; Ôdaru Spa (Nashimoto), Shizuoka Pref.; Nii, Kokubunji, Kagawa Pref.; Mt. Hikosan, Fukuoka Pref.

Distribution. Hokkaido, Honshu, Shikoku, Kyushu.

Eurhodope paradichromella sp. nov.

Very much resembles *E. dichromella* (RAGONOT) in external characters, but is distinguished by the following point: submarginal line of forewing more strongly, outwardly curved between vein M_1 and Cu_2.

External characters. Expanse 21–22 mm. Frons pale fuscous, smoothly scaled, labial palpus upturned, almost reaching vertex, fuscous, outer surface of 3rd segment plae fuscous, inner surface of 2nd and 3rd segment mixed with pale fusclus scales, with maxillary palpus scaling spatulate, pale fuscous, forewing greyish fuscous, antemedial line white, oblique, rather strongly angulated, and edged basally with a blackish cloud, a blackish lunule on discocellular, submarginal line rather strongly curved outward between vien M_1 and Cu_2, central area of forewing between antemedial line and postmedial line broadly and triangularly suffused with ash grey, cilia pale fuscous, hindwing pale fuscous, distal half more or less darker than basal half, cilia concolorous with forewing, under surface of both wings dark grey, but coloration of forewing is more or less darker than hindwing, and on forewing submarginal line of upper surface slightly reproduced.

Male genitalia. Uncus broad, tongue-shaped, smoothly rounded distally with slight hair dorsally, gnathos with a central projection narrow, sclerotized, with a slightly bifid apical process, valva rather short, broadest at middle, harpe small, lobed, sacculus narrow, short, saccus broad, rounded distally, juxta consisting of two broad lobes, transtilla arm much developed, lateral lobes narrow, weak, central incision deep and V-shaped, aedoeagus short, broad with weakly sclerotized wrinkles, the shape of ventral tuft of 8th abdominal segment identical with that of *E. dichromella* (RAGONOT).

Female genitalia. Almost identical with *E. dichromella* (RAGONOT), but is distinguished by the following point: signum consisting of concentrically arranged many thorns each of which is not so acutely pointed as shown in fig. 13.

Type-series.

Holotype ♂: Ohdomari, Kagoshima Pref., Kyushu, 29–31 v 1964 (M. YASUKAWA).

Allotype ♀: Same data as holotype.

Paratype. 1 ♀, Ohtani, Uozu, Toyama Pref., 7 viii 1965 (H. YAMANAKA), in the collection of H. YAMANAKA.

Distribution. Honshu, Kyushu.

Eurohdope hollandella (RAGONOT)

Rhodophaea hollandella RAGONOT, 1893, in ROMANOFF, Mém., Lép., **7**: 70; 1901, ibidem, **8**: pl. 43, fig. 1; CARADJA, 1925, Acad. Rom. Mém. Sect. Stiint., (3), **3**: 306; CARADJA & MEYRICK,

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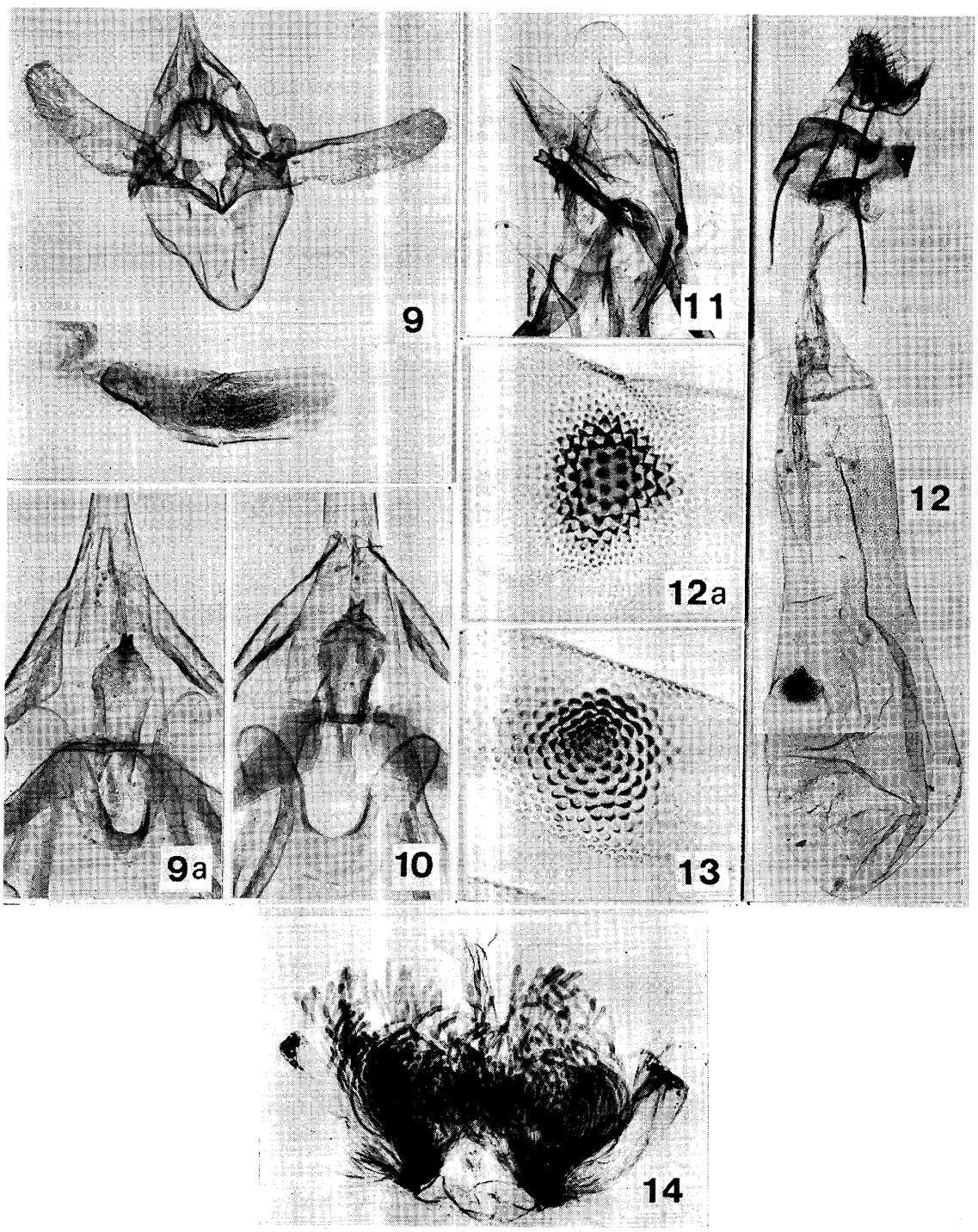

Fig. 9. ♂ genitalia of *Eurhodope pseudodichromella*, sp. nov., a. transtilla and gnathos. Fig. 10. Transtilla and gnathos of *Eurhodope dichromella* (RAGONOT). Fig. 11. Uncus, transtilla and gnathos of *Eurhodope paradichromella*, sp. nov. Fig. 12. ♀ genitalia of *Eurhodope pseudodichromella*, sp. nov., a. signum. Fig. 13. Signum of *Eurhodope paradichromella*, sp. nov. Fig. 14. Ventral tuft of 8th abdominal segment of *Eurhodope dichromella* (RAGONOT).

1933, Dt. ent. Z. Iris, **47**: 145; INOUE, 1955, Check List Lep. Jap., **2**: 139, no. 780.
Eurhodope hollandella: SHIBUYA, 1927, Ins. Mats., **2**: 92; 1932, Ins. World, **36**: 331.
Eurhodope (*Rhodophaea*) *hollandella*: LEECH, 1901, Trans. ent. Soc. Lond., **1901**: 412.

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Rhodophaea (*Eurhodope*) *hollundella*: MATSUMURA (misspelling of *hollandella*), 1905, Ins. Jap. (Lep.): 198, no. 1659.

Nephopteryx formosa: INOUE (nec HAWORTH, 1811), 1955, Check List Lep. Jap. **2**: 135, no. 752; Mutuura (nec HAWORTH), 1957 & 1971, in Icon. Het. Jap. Col. Nat., (1): 98, pl. 17, fig. 531; INOUE (nec HAWORTH), 1959, in Icon. Ins. Jap. Col. Nat. Ed., **1**: 237, pl. 166, fig. 35.

Specimens examined.

Lectotype ♂, of *Rhodophaea hollandella*, here designated, Japan, in the Canadian National Collection (property of the Carnegie Museum); stated in the original description to be based on a male and a female specimens, but I failed to find the female one in the Canadian National Collection.

1 ♀, Setagaya, Tokyo, 22 vi 1954 (H. YAMANAKA); 1 ♂, same data as above, 9 vi 1956 (H. YAMANAKA); 1 ♀, Kanetsuti, Unazuki, Toyama Pref., 21 vii 1973 (H. YAMANAKA); 1 ♀, Etomo-machi, Muroran, Hokkaido, 5 viii 1973 (H. YAMANAKA); 1 ♀, same data as above, 28–31 viii 1974 (K. MIYAMORI); 1 ♂, Katsura, Kamitaira Village, Toyama Pref., 26–27 vii 1976 (H. YAMANAKA); 1♂, 1♀, Bijodaira, Mt. Tateyama, Toyama Pref., 26 vii 1977 (S. TSUKASAKI), in the collection of H. YAMANAKA.

Distribution. Japan (Hokkaido, Honshu), China, Korea.

Remarks. This species were recorded by LEECH (1901), MATSUMURA (1905) and SHIBUYA (1932) from Japan since RAGONOT had described, but they did not illustrate moth in their reports. Recently MUTUURA (1957 & 1971) and INOUE (1959) illustrated this species in color under the name of *Nephopteryx formosa* HAWORTH. Since then this species has been known in Japan as *N. formosa*. However, the external and anatomical characters of *N. formosa* sensu MUTUURA *etc.* are quite distinct from European *N. formosa* (*cf.* HANNEMANN, 1964, Kleinschmett. Microlep., **2** (Pyr.): 160, pl. 11, fig. 7, fig. 93a, b), and the former is conspecific with the lectotype of *Rhodophaea hollandella* RAGONOT.

Assara funerellum (RAGONOT) **comb. nov.**

Hyphantidium funerellum RAGONOT, 1901, in Romanoff, Mém. Lép., **8**: 75, pl. 43, fig. 16; LEECH, 1901, Trans. ent. Soc. Lond., **1901**: 406; MATSUMURA, 1905, Cat. Ins. Jap. (Lep.): 195, no. 1630; SHIBUYA, 1932, Ins. World, **36**: 257.

Ephestia funerellum: INOUE, 1955, Check List Lep. Jap. **2**: 134, no. 743.

Heterographis exiguella CARADJA, 1926, Dt. ent. Z. Iris, **40**: 169, **syn. nov.**

Assara exiguella: ROESLER, 1973, Microlep. Palaearc., **4**: 150, pl. 6, fig. 53(moth), pl. 50, fig. 53 (♂-genitalia), pl. 106, fig. 53 (♀-genitalia).

Homoeosoma albocostella INOUE, 1959, Tinea, Tokyo, **5**: 293, fig. 1 (moth), fig. 2 (♂- & ♀-genitalia); 1959, in Icon Ins. Jap. Col. Nat. Ed., **1**: 237, pl. 166, fig. 26, **syn. nov.**

Specimens examined.

Holotype ♂, of *Hyphantidium funerellum*, Japan, in the Canadian National Collection (property of the Carnegie Museum); stated in the original description to be based on a single male specimen.

1 ♀, Mt. Takaosan, Tokyo, 17 vi 1955 (Y. WATANABE); 2 ♀, same data as above, 3 vii 1959 (T. MAENAMI); 1 ♀, Kumanotaira, Gunma Pref., 27 vii 1959 (T. MEANAMI); 1 ♀, Kamidaki, Kaminiikawa, Toyama Pref., 20 vi 1961 (T. MINAMIYAMA); 3 ♀, Kanetsuti, Unazuki, Toyama Pref., 21 vii 1973 (H. YAMANAKA); 1 ♀, Bijodaira, Mt. Tateyama, Toyama Pref., 26 vii 1977 (S. TSUKASAKI); 1 ♂, 3 ♀, Inonedaira,

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Arimine, Toyama Pref., 18 viii 1979 (H. YAMANAKA), in the collection of H. YAMANAKA. Compared with INOUE's holotype (♂) from Aichi Pref., Japan.

Distribution. Japan (Hokkaido, Honshu, Kyushu), China.

Remarks. This species had long been little known since the publication of the original description. In 1975 I had an opportunity to examine RAGONOT's type-series of some phycitine moths belonging to the Carnegie Museum. As a result of the investigation of the external characters of the holotype of *Hyphantidium funerellum* RAGONOT, 1901, I found that CARADJA's *Heterographis exiguella* from China (Shanghai) and INOUE's *Homoeosoma albocostella* described from Japan (Hokkaido, Honshu, Kyushu) are identical with *H. funerellum*. Therefore, *exiguella* CARADJA and *albocostella* INOUE are here regarded as junior synonyms of *funerellum*.

摘　　要

山中浩: フタグロマダラメイガ *Eurhodope dichromella* (RAGONOT) と近縁の2新種の記載と既知種について

Eurhodope pseudodichromella YAMANAKA, **sp. nov.** コフタグロマダラメイガ (新称)

本種はフタグロマダラメイガ *Eurhodope dichromella* (RAGONOT) によく似るが，外観上は内横線がフタグロマダラメイガのように屈曲せずになめらかに湾曲していること，また雄の交尾器では transtilla の中央部の切れ込みがフタグロマダラメイガより一層深いことなどで区別できる．しかし雌の交尾器では区別することが困難である．北海道 (利尻島)，新潟，長野，富山，群馬，埼玉，東京 (高尾山)，神奈川，静岡，四国 (香川)，九州 (福岡) から採集された標本にもとづいて記載した．平地から山地にかけて分布し，5月から8月に採集されている．

Eurhodope paradichromella YAMANAKA, **sp. nov.** オオフタグロマダラメイガ (新称)

フタグロマダラメイガに酷似する．外観上は亜外縁線が脈 M_1 と Cu_2 の間でフタグロマダラメイガよりやや強く外方に湾曲するが，これだけによって区別することは困難である．雄交尾器では uncus は幅広く舌状，gnathos は細く，やや強く骨化し，また transtilla が非常によく発達しているので，フタグロマダラメイガとの区別は容易である．雌交尾器の signum は同心円上にほぼ規則正しく配列された太い棘状突起群よりなるが，フタグロマダラメイガの各棘状突起の先端はやや尖るのに対し，本種は鈍化しているので区別できる．九州 (鹿児島県) で5月，本州 (富山県) で8月に採集された標本にもとづいて記載したが，正確な分布範囲や発生期はよくわからない．本種はフタグロマダラメイガと酷似しているので，おそらく，いままで両種は混同されていたものと考えられる．

Eurhodope hollandella (RAGONOT) ウストビネマダラメイガ (改称)

本種は RAGONOT (1893) によってわが国から記載されたものであるが，その後 LEECH (1901)，松村 (1905)，渋谷 (1932) らによって紹介されていた．しかしこれらの報文中には蛾の記載がなく，いままでその正体がわからなかった．しかし筆者は 1975 年 MUNROE, 六浦両博士のご厚意で Carnegie Museum 所蔵のタイプ標本を調べることができ，本種の特徴を知ることができた．その結果，六浦 (1957, 1971, 原色日本蛾類図鑑上巻: 98, pl. 17, fig. 531)，井上 (1959, 原色日本昆虫図鑑 **1**: 237, pl. 166, fig. 35) らによってトビネマダラメイガ *Nephopteryx formosa* HAWORTH として図説されている種が本種に該当することが判明した．*N. formosa* HAWORTH は中央ヨーロッパおよびイギリスに分布する種で，渋谷 (1927, *Ins. mats.*, **2**: 124) によってわが国から初めて記録されているが (産地: 北海道札幌)，筆者は渋谷の報告した種が真の *formosa* HAWORTH かどうか，またこの種がわが国に分布しているかどうかなどについてまだ確認していない．

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なお，六浦（前出: 101, pl. 18, fig. 548），井上（前出: 240, pl. 167, fig. 30）らによってナシハマキマダラメイガ *Eurhodope hollandella* (RAGONOT) として図説されている種は渋谷 (1928, *Ins. mats.*, **2**: 122) が北海道札幌で採集された標本にもとづいて記載したイタヤマダラメイガ *Etielloides curvella* に該当する．従来 *hollandella* の和名は上記のようにナシハマキマダラメイガとよばれていたが，真の *hollandella* はナシにはつかないので本種の和名をウストビネマダラメイガと改めた．

Assara funerellum (RAGONOT) フタスジマダラメイガ

本種は RAGONOT (1901) によってわが国から記載されて以来まったく正体が不明であったが，筆者は 1975 年 MUNROE，六浦両博士のご厚意で Carnegie Museum 所蔵のタイプ標本を調べる機会を得，本種を正しく同定することができた．その結果 ROESLER (1973, *Microlep. Palaearc.*, **4**: 150, pl. 6, fig. 53, pl. 50, fig. 53, pl. 106, fig. 53) が中国および日本に分布するとした種 *Assara exiguella* (CARADJA, 1926) (中国の上海から記載)，が本種と一致することが判明した．また ROESLER (前出) は井上 (1959, *Tinea, Tokyo*, **5**: 293, fig. 1, fig. 2) がわが国から記載した *Homoeosoma albocostella* を *exiguella* のシノニムとしているので，筆者は井上博士より *Homoeosoma albocostella* のタイプ標本を借用し比較検討した結果，*albocostella* も本種とまったく同じものであることを確認することができた．従って，ここでは CARADJA が記載した *Assara exiguella* および井上が記載した *Homoeosoma albocostella* を *Assara funerellum* (RAGONOT) のシノニムとした．

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